

AMENDMENTS TO THE SPECIFICATION

Please amend page 3, second paragraph as follows:

--In this context, QCTCs have been proposed to increase performance in a soft combining-using system. For details of the QCTCs, see Korea Patent Application No. P2000-62151 filed by the present applicant, and filed in the U.S. Patent and Trademark Office on October 17, 2001 and assigned Serial No. 09/981,934.--

Please amend page 14, second full paragraph as follows:

--Referring to FIG. 6, the remaining unselected symbols from the previous puncturing matrices are all selected in step 601. The number of the selected symbols is defined as N_{s2} . In step 603, a new N_s is defined by $(N_s - N_{s2})$. Since symbols at all positions are selected from the puncturing matrices in the process of the operations shown in FIGs. 4, 5 and 6, the new N_s is the number of symbols to be repeatedly selected. In step 605, it is determined whether the new N_s is greater than 0. If the new N_s is 0, the procedure ends. If it is greater than 0, in step 607 as many symbols as the new N_s are selected repeatedly from the information symbols. In other words, the selected symbols are transmitted repeatedly.--

Please amend page 30, second full paragraph as follows:

--In step 805, concatenation or grouping rules are set to generate sub-codes for each QCTC in each group using the sub-codes C_{pj} ($j=0, 1, 2, \dots, S_p-1$) of each primitive code C_p . The rules may include the number of sub-codes to be concatenated or grouped in each primitive code. In other words, in step 807 an intended sub-code C_{ij} with a code rate R_i is generated by concatenating or grouping sub-codes of the primitive code C_p . A sub-code grouping table can be made preliminarily by considering all possible sub-code grouping. In this case, it is preferable to

group sub-codes sequentially in the primitive code C_p --

Please amend page 30, last paragraph:

--Once a code rate (or a QCTC or a sub-code) is given, in step 807 a sub-code of QCTC with the code rate is generated by concatenating sub-codes of a corresponding primitive code C_p --

Please amend page 39, last paragraph, continuing onto page 40 as follows:

--FIG. 11 is a flowchart illustrating sub-code transmission using one-dimensional adaptive QCTCs according to the second embodiment of the present invention. Referring to FIG. 11, upon generating of a new encoder block in step 1100, the controller 1303 sets all variables ($j_current$, j_pre , $g_current$ and g_pre) to initial values in step 1101. In step 1103, the controller 1303 selects a QCTC group including a QCTC with a given code rate and determines a grouping number g , that is, the number of sub-codes to be grouped in a primitive code C_p . Here, the code rate is determined according to a channel condition and the data rate of input data in the transmitter. The grouping number g is a variable by which a QCTC included in the group is identified. After determining the group and the grouping number $g_current$, the controller 1303 reads a variable j_pre stored for the QCTC C_i with the code rate and sets a variable $j_current$ to the read value in step 1105. The $j_current$ indicates the sequence number of a sub-code in a QCTC. Then, the controller 1303 selects the $jth_current$ sub-code of the QCTC corresponding to the variable $g_current$ in the group in step 1107 and transmits the coded symbol corresponding to the selected sub-code in step 1109. For the next transmission, in step 1111 the variables $g_current$ and $j_current$ are stored as variables g_pre and j_pre . Sub-codes corresponding to $j_current(=0)$, that is, the first sub-codes of the QCTCs are expressed as

$$\forall g \quad C_{p0}^g, \quad g = 1, \dots, \dots (15)$$

Then, a sub-code corresponding to $g_current$ (or g) is selected among the first sub-codes.--

Please amend page 40, last paragraph:

--After transmitting the sub-code, the controller 1303 determines whether another sub-code is requested, that is, whether a retransmission request has been received from a receiver in step 1111. Upon request from another sub-code, the controller 1303 transmits a sub-code with a given rate in step 1113. Otherwise, the controller 1303 returns to step 1100 to receive a new coded block.--